

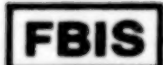
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17 September 1981

# Worldwide Report

TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

No. 182



FOREIGN BROADCAST INFORMATION SERVICE

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17 September 1981

# WORLDWIDE REPORT

## TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 182

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## REPORTS OF TELECOMMUNICATIONS COMMITTEE SUMMARIZED

Bombay THE TIMES OF INDIA in English 23 Jul 81 p 4

[Text] New Delhi, July 22 (UNI)--Immediate import of about 100,000 telephone instruments for improving the telephone services in the four metropolitan centres is understood to have been recommended by the high-powered Sarin committee on telecommunications.

These telephones should be given to those who ordinarily make more than 3,000 metered calls per quarter. The telephone department could also consider levying an extra charge for such replacement to pay for this purchase, the committee is reported to have suggested.

The committee, which was set up in May last to make comprehensive review of the functioning of telecommunication services in the country and recommend measures for improvement, has so far submitted two interim reports.

The import is necessary to give urgent relief to heavy users, pending indigenous production of a better instrument which may take some time.

In its first interim report, the committee is reported to have made a number of other recommendations on the special services, telephone directories, better training of operators, maintenance of equipment and the steps required to avoid breakdown of a large number of telephones during monsoon.

According to the committee, priority attention should be given to improving the functioning of the special services like 197 (director enquiry), 198 (fault repair) and 199 (assistance) as the users' experience with these calls determines the image of the department. The services have to be manned round the clock. To combat problems created by absenteeism, a fully trained operator reserve should be created immediately to meet any emergency. The operators' training should also be diversified.

#### Exchange Equipment

To avoid the pressure on the directory inquiry service, the committee has suggested installation of in-house computers in the four metropolitan districts to provide computer-aided facilities to the operators.

If telephone directories are issued every year without fail at least in metropolitan systems, it would considerably ease the situation.

The committee also feels that inspections of all subscriber telephone installations should be carried out by telephone inspectors regularly. If inspection is carried out periodically it will lead to substantial improvement in the functioning of such fittings and better service.

Telephone instruments requiring major repairs must be replaced immediately and repaired only at a central place instead of in the premises of subscribers.

The committee has also desired better maintenance of exchange equipment so that frequent faults are avoided. Adequate spares stocks must be built so that equipment could be restored quickly.

The committee wants special telex maintenance groups to clear faults expeditiously. Telex requires priority attention as most of the subscribers are engaged in economic or governmental activities and the telex service produces high revenue and financial surpluses.

CSO: 5500/7161

# LOK SABHA TOLD OF 10-YEAR SATELLITE PLANS

Bombay THE TIMES OF INDIA in English 20 Aug 81 p 13

[Text]

NEW DELHI, August 19 (PTI): Space-borne tracking stations and new launch ranges for bigger and powerful rockets have been proposed under the next ten-year space programme expected to cost Rs. 854 crores.

A report on space programme profile for 1980-90 placed in the Lok Sabha today said India would become "self-reliant in launching operational satellites for remote sensing" before the end of this decade.

In the next ten years, the space department plans to have operational augmented satellite launch vehicles, (ASLV) and polar SLV (PSLV) capable of launching 600-kg. remote-sensing satellites in sun-synchronous orbit from Indian ranges.

The space development decade envisages development of ASLV by 1983 and PSLV by 1987. India's first remote-sensing satellite will be launched from abroad in 1984 and an Indian-built communications satellite (proto-INSAT) in 1986.

Two multi-purpose satellites, INSAT-1A and INSAT-1B will be launched from the United States in 1982 and 1983. INSAT-1C will be launched in 1989 from the U.S.

The ten-year profile also envisages launch capability for geosynchronous missions.

CSO: 5500/7184

## INFORMATION MINISTER TELLS TV, PRESS DEVELOPMENTS

New Delhi PATRIOT in English 19 Aug 81 p 5

[Text]

**T**HE micro-wave linking of TV stations between Delhi and Bombay is expected to be completed next month, Information and Broadcasting Minister Vasant Sathe told the Lok Sabha on Tuesday, reports PTL.

The circuit between Delhi and Calcutta is expected to be completed in March next, and those between Delhi and Srinagar and between Bombay and Poona and between Jullundur and Amritsar are expected to be completed in September, May and June next year respectively.

The micro-wave circuits were intended for exchange of programmes between TV stations and for feeding relay transmitters, he told Mr Jagdish Tytler.

The Minister said the TV centre at Trivandrum is expected to be completed by 1984-85.

The centre will cover whole of the Trivandrum district and about 60 per cent of Quilon district.

He said the Kerala Government and the 'KELTRON' (Kerala Electronics Corporation) have submitted a proposal for establishing four transmitting stations in Kerala with a single common studio at Trivandrum so that the entire State could be covered.

The House was informed that two 16 MW film production units proposed to be set up at Calcutta covering eastern region

and at Bangalore covering southern region are expected to start functioning by November this year.

The production centre in eastern region will produce films in Bengali, Oriya, Assamese, Manipuri and other regional and tribal dialects of the region. The production centre in the southern region will produce films in Tamil, Telugu, Kannada, Malayalam and other regional and tribal dialects of the southern region. Some of the 16 MM films will be produced in tribal dialects depicting their life and culture.

The themes to be used for production of these films are still to be finalised, the Information and Broadcasting Minister, Mr Vasant Sathe told Mr Giridhar Gomango in a written reply.

Mr Sathe said government is committed to the freedom of the press and would not like to interfere in the management of the news agencies which are in the private sector.

News agencies are, however, free to merge or unite as they think best, the Minister told Mr Ramavata Shastri.

He said employees of the 'Hindustan Samachar' had in a memorandum submitted to him on 12 May, demanded among other things, revival of Samachar, failing which the unification of Hindi news agencies on the pattern recommended by Kuldip Nayar Committee.



MORE JAPANESE AID FOR TELECOMMUNICATIONS SOUGHT

Madras THE HINDU in English 19 Aug 81 p 9

[Text] Madras, Aug. 18--The Japanese Government has advanced to the Government of India so far loans amounting to 11.7 billion yen (about Rs. 35 crores) for implementing telecommunication projects. The first two loans of 9 billion yen (Rs. 27 crores) and 2.7 billion yen (Rs. 8.1 crores) have already been utilised and the Union Government is seeking the third and fourth loan from Japan for executing more projects.

Two officials of the Appraisal Mission of the Overseas Cooperative Fund of Japan, Messrs. H. Tanaka, Loan Officer, and S. Yamamoto, Engineer, who have been in India since August 13 have been acquainting themselves with the various projects implemented with the assistance of the first two loans.

The yen credit is intended for improving the telephone switching equipment in telephone exchanges and for modernising telecommunication through microwave network.

The two Japanese officials were accompanied by Mr. B. G. Talloo, Director (Coordination of Projects), P and T Directorate, Government of India.

They came here on Monday from Calcutta and visited the cross bar telephone exchanges at Mambalam and Madras Harbour and the site for the proposed electronic exchange in Nungambakkam. They left for Delhi in the evening.

CSO: 5500/7182

## POST OFFICE TO SEEK BIDS FOR SECOND SATELLITE STATION

Auckland THE NEW ZEALAND HERALD in English 14 Jul 81 p 3

[Text] The Government has authorised the Post Office to call tenders for a second satellite signal receiving station to be built at Warkworth.

The station, likely to cost about \$10 million, is expected to be completed by 1984 when an updated satellite will be brought into service by Intelsat, an international organisation of which New Zealand is a member.

**No Break**

The Postmaster-General, Mr Cooper, yesterday announced that the Government had approved recommendations by the Post Office on how to adapt to the Intelsat V satellite and a rapid increase in international communications through New Zealand.

The existing Warkworth antenna station would have to be upgraded to handle Intelsat V traffic, Mr Cooper said. The estimated \$5 million refurbishment project would begin as soon as the second antenna was completed.

By building a second signal-receiving station, the Post Office can avoid a 14-week blackout on satellite traffic while the present antenna is upgraded.

More importantly, the new station will triple the number of satellite circuits available for international communications in the Pacific.

**Relieved**

With the annual growth in traffic running at 25 per cent

—rocketing to 40 per cent last year—the Post Office is relieved at the reduction in pressure on the system which the new station will allow.

But engineers claim the relief will be relatively short-lived.

"We believe we will have to be thinking about either more submarine cables or more antennae by the end of the decade," one senior engineer said.

This would depend on the demand, although present indications were that another extension to the system would be needed.

**Advantage**

The engineer said the new antenna would be isolated from the existing nine-year-old structure at Warkworth.

However, there were advantages in building it alongside. Control gear to rotate the antenna in sequence with the satellite would be housed in the same building, for example. This would avoid a more costly duplication.

The two antennae would also be able to supply a single microwave feed from a point just south of Warkworth to the Post Office transmission tower on the Waitakeres and from there to Auckland.

Possible locations for the

new station were limited in any case, the engineer said. Reception from the Intelsat IV satellite was restricted to the northern part of the North Island.

**Specialised**

He said he was not expecting any tenders from within New Zealand for the contract.

There was only a small group of companies in the antenna supply business. One of these was the Nippon Electric Co. of Japan, which had built the existing Warkworth station.

## TRINIDAD AND TOBAGO

### BRIEFS

TELCO EXPANSION--Port-of-Spain--The Trinidad and Tobago Telephone Company (TELCO) is now finalising plans for a major rural development programme from which scores of districts in the country will benefit. The two-year expansion programme will take direct dialling to some 400 villages and small towns throughout the country and extend the telephone service to thousands of new subscribers. Prime Minister, George Chambers was told of the plan earlier this month at a Cabinet meeting in a report by Public Utilities Minister, Mervyn deSouza. TELCO officials are now working on a detailed breakdown of the expansion programme to Senator deSouza. Chambers had requested information on TELCO's plans for extending its telephone services to various districts in St Patrick, following his recent ten-day tour of the country. Senator deSouza explained that expansion of the telephone service in St Patrick was part of the multi-million dollar rural development programme on which the company was working. A TELCO spokesman said that by next month, a tender will be awarded for work to begin on the project. He said the rural development programme would be undertaken simultaneously with the on-going job of upgrading the service in key urban areas of the country. It is understood that adjustments have had to be made to the rural development projections in the light of recent complaints from various districts about inadequate or total lack of telephone services. During his tour of St Patrick, the prime minister heard complaints from several villagers who felt they had no hope of getting telephones. Similar complaints were made to TELCO officials during the accounting to the taxpayer meetings. [Text] [Bridgetown THE NATION in English 17 Aug 81 p 15]

CSO: 5500/7546

JORDAN

BRIEFS

'PETRA-JNA' EXPANSION PROJECT--Amman, (PETRA)--PETRA-JNA has started the implementation of a project aimed at boosting and expanding its transmission station. The project will increase the area of transmission of the present station in order to convey the voice of Jordan to new regions in the world and to enable various other world news agencies to receive the agency's transmission. The new project, which will begin its experimental transmission during the next 2 weeks, will cover Africa and the eastern parts of Asia. Under this project, a new 10 kw-strong transmitter and a rotating logarithmic antenna will be installed. Transmission of the present station covers Europe, North Africa and the Arab homeland by means of two 10 kw-strong transmitters installed at the beginning of 1979. [Text]  
[JN160911 Amman AR-RA'Y in Arabic 16 Aug 81 p 3]

CSO: 5500/4730

## SERIES OF TELEVISION, TELEPHONE CONTRACTS REPORTED

London JAMAHIRIYA REVIEW in English No 14, Jul 81 p 18

/Text/

THE LIBYAN Jamahiriya's determination to establish an efficient countrywide telecommunications network has been underlined by a series of recent contracts for the supply of television transmitters earth satellite stations and a telephone cable network.

In May it was reported that France's Laboratoire Generale des Telecommunications (LGT) had won an extension to its existing contract for the supply of television transmission stations, bringing the total contract value to \$23.6 million. LGT is now to install 40 stations, of which nine are covered by the extension and the rest by the initial contract, awarded in June last year. Work is for completion in 18 months, with each station to house a 1 kW transmitter and ancillary equipment. LGT will also be training Libyan staff.

The new station will allow Libyan television's Arabic language channel one to be broadcast countrywide. The area covered by channel two, which broadcasts in English, French and Italian, will not be extended until at least 1983: priority will go to expansion of the radio net-

work. Under the new 1981-85 development plan, \$2,000 million has been allocated for the expansion of the Jamahiriya's broadcasting services.

Sweden's I. M. Ericsson has won a \$17 million contract for a telephone cable network in the north-eastern town of Derna, for completion in 30 months. *Middle East Economic Digest* reported on 1st May. Work entails laying cable to serve about 10,000 subscribers. The Derna municipality has ordered a new exchange to handle the new subscribers. The development plan foresees the expansion of the country's telephone network to provide six phones per 100 residents.

Japan's Nippon Electric Company has won a contract to supply satellite earth stations for telephone communications and television broadcasts, with final delivery in 23 months. It was reported early in June. No details of the contract have been disclosed.

Libya wants a series of earth satellite stations in order to gain maximum benefit from the communications satellites that the Arab Satellite Organisation

(Araosat) plans to put into orbit. In May it was reported that Arabsat had awarded France's Aerospatiale a \$130 million contract for the construction of the three satellites in the joint Arab project. Two of them will be put into orbit, with the third being held in reserve. Each of the two will provide 8,000 telephone circuits and six television channels. There will also be a 'pan-Arab' channel and a community channel which low cost ground stations will be able to receive. Construction of the satellites will take about 30 months, and the satellites will be put into orbit either by the European Space Agency's Ariane rocket or by the Space Shuttle.

The new Libyan development plan provides for a special emphasis on the acquisition of technical skills by Libyans, and this is reflected in a recent announcement that Greece is to train 480 Libyans in telecommunications. They will attend schools in Greece run by the state-owned Hellenic Telecommunications Organisation, which under an earlier agreement has already undertaken to train 200 Libyans.

CSO: 5500/4729

## SECOND TELECOMMUNICATIONS ANTENNA INAUGURATED AT NKOLTANG

Libreville L'UNION in French 27 Jul 81 pp 1, 4

[Article by Evoung Bitegue]

[Excerpts] On Saturday 25 July at Nkoltang, at 1045 hours, Prime Minister Leon Mebiame cut the green, yellow and blue ribbon at the threshold of the new technical annex to the "2 December" station.

The prime minister, who came to Nkoltang aboard a special train, arrived at the site of the ceremony about 1000; he was welcomed by the director of the Gabonese International Telecommunications Company (TIG), Mr Dominique Hella Ondo and several local dignitaries.

Equipped and installed by the French company, Telspace, with a diameter of 11.8 meters and costing 500 million of our francs, this second satellite telecommunications antenna--according to Mr Souah Thomas, general manager of OPT [Postal and Telecommunications Office]--is pointed toward a geosynchronous satellite specially adapted for digital telecommunications. However, before providing the specifications and describing the importance of this new jewel which will now make possible direct communication with the United States, the FRG, Switzerland, Canada and Spain, Souah first briefly sketched the history of satellite telecommunications in Gabon. In more than one way that history coincides with the creation of the TIG in 1972. In fact, it was at that same time, said the OPT general manager, that our country adhered to the international satellite telecommunications organization (INTELSAT). Joining INTELSAT led to construction of the first Nkoltang antenna, which was christened "2 December" station when it was inaugurated in 1973, and which provides for the transmission of about 100 telephone circuits, dozens of telex circuits, and also the broadcasting and reception of television pictures. Turning more specifically to the second antenna, Souah justified its construction by the temporary suspension of operations of the first antenna, which, in order to meet INTELSAT's technical requirements, must be modified. At the conclusion of his remarks, Souah emphasized that construction of the second antenna is part of a vast program to develop Gabonese telecommunications, a program which among other things calls for the restructuring of the national telecommunications and television network, utilization of regional satellites, digital wireless beams, optical filament cable for urban networks, the utilization of solar energy, etc.

In economic terms, the minister added, this second telecommunications antenna will facilitate communications between Gabonese businessmen and foreign commercial agents. In cultural terms, the new broadcasting and reception facilities will improve the capabilities of our media to bring news and information to the masses.

## PLEDGE TO REHABILITATE, IMPROVE TELEPHONE NETWORK

Accra DAILY GRAPHIC in English 13 Aug 81 p 1

[Article by Nelson Duah]

[Excerpts]

**A TOTAL amount of C344 million is to be spent on an expansion and rehabilitation programme to improve the present internal telephone network in the country.**

The programme, which is to enable the network to cope with the external influx of communication, will be undertaken in phases.

The first phase of the programme estimated at C50 million has already been awarded on contract.

The President, Dr Hilla Limann announced this when he commissioned the \$14.6 million Earth Satellite Station at Nkuntunae near Accra yesterday.

Dr Limann said the first phase will include a National Telephone Switching

Centre in Accra. It will also involve the replacement of existing local automatic exchanges in Accra Central and Cantonments with new and larger capacity exchanges.

Among the many innovations in the programme also is the conversion of existing manual exchanges to the automatic system.

The President said: "microwave radio links are also being installed in the Western, Central, Eastern, Volta and Ashanti Regions between Takoradi, Tarkwa, Obuasi, Dunkwa, Bekwai and Kumasi."

He said his Administration would not be satisfied with the Satellite Station unless the country's poor internal telephone system was improved.

The President emphasized: "Our ultimate objective is easy and quick communication at home and also directly with all member states of the OAU and in fact with every corner of the world."

Dr Limann called on all Ghanaians to check anyone destroying or stealing cables in order to protect "our collective property and national assets."

Dr Limann talked to the Deputy Governor-General of Canada, Mr Justice Brian Dickson and Sir Ian Gilmor, Lord Privy Seal of the United Kingdom.

This was after he had cut the tape to unveil a plaque to declare the Station commissioned.

Mr Harry Sawyer, Minister of Transport and Communications, in his speech, said telecommunications technology "is developing so fast and new and better electronic equipment are being invented and installed in Europe and America almost every decade."

CSO: 5500/5071



# PROGRAM FOR FURTHER DEVELOPMENT OF TELEVISION AND BROADCASTING

Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 pp 3-5

[Article by Ye. ye. Dobrovol'skiy, deputy chief, Chief Directorate of Space and Radio Communication, USSR Ministry of Communication]

[Text] Every year on 7 May, our country celebrates Radio Day, which has become a holiday for all communicators. Radio, which was invented 86 years ago by the great Russian scientist Aleksandr Stepanovich Popov, is now a part of the daily life of modern man. The role of radio broadcasting and television in the life of our country increases continuously. In terms of efficiency, radio broadcast and television far exceed newspapers and journals, and are the most widespread and effective media for information, propaganda and communist education of the workers.

In his greeting to the country's communicators, Secretary General of CC CPSU and Chairman of the Presidium of the Supreme Soviet of the USSR Comrade L.I. Brezhnev noted that projects to develop the material base for radio broadcasting and television have been completed. New systems have been created for transmitting television programs using satellites. Wire broadcasting has been developed to the utmost, and the number of broadcast relay points has increased by a factor of 1.3. This was the estimate given for the development of radio broadcast and television facilities for the past five-year plan. The five-year plan for the introduction of radio broadcast station facilities has been met ahead of schedule, by the 110th anniversary of V.I. Lenin's birth; seventy percent of the increase in facilities was achieved by conversion and augmenting existing equipment and by installing new equipment at areas which were freed as the result of conversion.

The development of the network of multi-program radio broadcast stations using frequency modulation in the meter waveband continued. Wire broadcast (PV) radio points numbering 18.5 million have been added, and the multi-program FV has been increased by 15 million points.

The new "Raduga," "Ekran" and "Gorizont" satellites have been put into operation to transmit central television (TV) programming, making it possible to provide television for the populace in eastern and western Siberia. The assignments for putting television transmission stations with power of one kw and higher into operation have been fulfilled by 127 percent. Eighty-nine powerful TV transmitting stations and 550 low-power television relays have been put into operation. A network of TV transceiving stations in the "Ekran" system has been organized. Substantial work has been done on the introduction of color television.



The basic directions of economic and social development of the USSR for 1981-1985 and up to 1990, which were confirmed at the XXVI CPSU Congress, have outlined a large-scale program for developing radio broadcasting and television more fully and for improving their quality. Specific tasks have been established, including the further development of television and radio broadcasting, introducing a second nationwide television program, developing color television and stereophonic radio broadcasting, and making wider use of satellites for organizing multi-program television and radio broadcasts.

The Communist Party and the Soviet government are devoting unceasing attention to the development and perfection of radio broadcasts. Our entire country is now served by radio broadcasting. The population holds over 75 million radio receivers, and about 82 radio broadcast points. The existing network of radio broadcast stations using long, medium, short and meter waves is the most diverse and one of the largest in the country in terms of technical facilities used. During the 11th Five-Year Plan, this network will be developed and perfected significantly in all of the radio broadcast bands. It is now possible to receive at least two broadcast programs everywhere, and as many as four or five can be received in large cities.

There are now nine nationwide central broadcast programs, using all radio wavebands in an integrated fashion. The first central program is the basic national social-political and artistic program. The first central program has been broadcast in five zones since 20 October 1980, which has allowed this basic program to be received everywhere at convenient local times. The average daily capacity of each of these is twenty hours.

The second central program--"Mayak"--is broadcast on a 24-hour basis, and is hugely popular with Soviet listeners. The "Mayak" program covers eighty percent of the country, which was made possible by using satellites to relay it to radio broadcast stations. The "Mayak" program is now fed to many cities throughout the country over high-quality wideband satellite radio broadcast channels around the clock.

The third central program--general education, literature and music--is broadcast for an average of seventeen hours per day. This program reaches primarily the population of the European portion of the USSR. There are plans to implement new technical facilities during 1981-1985 and increase significantly the radius in which the third program can be heard, transmitting it to several zones within the country.

It is planned for the 11th Five-Year Plan to increase the capacities of radio broadcast stations in all of the broadcast bands, mainly by conversion, technical-equipment, augmenting existing radio enterprises, and installing new transmitters in areas which are freed. All of this will produce a significant technical and economic effect, increase the price per channel-hour of transmitter operation, and increase the volume of production as measured monetarily. The number of service personnel will generally remain unchanged which, with an increase in production, will lead to a substantial increase in labor productivity at a particular enterprise.

The synchronous broadcast networks will continue to be developed in the current five-year plan. Type SRV-7 7-kw transmitters supplied by Czechoslovakia will be installed for this purpose at many television transmission stations. This will make it possible

to obtain a significant technical and economic effect with low expenditures (since existing production area, power and structures are used). The deployment of transmitters directly within cities makes it possible for the field intensity of the valid signal to exceed the noise level significantly, thus improving reception quality of medium-wave radio broadcast programs in cities.

The network of multi-program broadcast stations operating in the meter waveband using wideband frequency modulation (MW-FM stations) will be developed further during the 11th Five-Year Plan. About seventy new MW-FM stations will be installed, with the total number in the country exceeding 500 stations. New "Dozhd'-4" four-program stations will be installed in addition to the "Dozhd'-2" two-program MW-FM stations. The planned increase and modernization of the network will make it possible to provide high-quality two-program broadcast to over eighty five percent of the population of the country, and four-program broadcasting for about eighteen percent of the population, by 1985.

Stereophonic programs are now being broadcast over the MW-FM network in 26 cities throughout the country. As we know, stereophonic sound reproduction has better radio broadcast quality than monophonic, and the sound of voices and musical instruments is more natural, with the sensation of their special separation. Stereophonic radio broadcast transmission is planned for 80 more cities during the new five-year plan.

It is planned to use communication satellites for radio broadcast, particularly to feed central stereophonic programs to remote regions of the country.

The development of the technical facilities for wire broadcasts, which together with radio broadcast forms the unified national broadcast network, will continue during the 11th Five-Year Plan. Combining the powerful radio broadcast transmission network, in which there are over 75 million receivers, and the branched PV network, which has about 82 million radio broadcast points, has made it possible to provide wire broadcast to 98 percent of the country's population.

The main area of development and perfection of wire broadcast is that of accelerating its transition to a system of multi-program broadcasting. There are now over 40 million radio broadcast points to which three broadcast programs are being fed. The republic capitals, kray and oblast centers and large industrial cities of the country are provided with multi-program broadcasting. The main difficulty in the way of developing multi-program broadcasting is the large gap between the capabilities of the radio network and its provision of three-program loudspeakers, which the USSR Ministry of the Communication Equipment Industry is clearly not producing in sufficient quantity.

It is planned to increase the number of radio broadcast points during the present five-year plan by at least 20 percent and to continue developing the system of multi-program broadcasting in the cities down to the rayon centers, and to initiate its development in rural regions.

The most important task in developing and improving technical wire broadcast facilities is to automate the many rural radio broadcast centers (RBC), which improves their technical and economic indicators significantly. Nine thousand radio centers have already been automated, which has made it possible to eliminate about 11,000 operating personnel and increase the length of radio center operation to 17-18 hours per day. There are plans to automate 2,500 radio stations during 1981-1985, which will free another 2,700 workers.

The domestic television transmission network is the most widely branching and one of the largest in the world. It now includes over 3,500 TV transmitting stations, 455 of them having transmitters between 5 and 50 kw, with the rest being relays with power of up to 100 kw. By dint of great effort, communicators have been able to create a branching network of long-distance TV channels over radio broadcast and coaxial cables and satellite communication lengths in rapid fashion, providing high quality television program feed from their point of origination to the transmitting stations throughout the country, and making it possible to exchange programs.

Central television programs are now transmitted from Moscow on a 24-hour basis. The first central television program (I TV)--the basic national information social-political and artistic programs--is now received throughout the USSR, where over 86 percent of the population of the country lives. There are now over 75 million TV receivers in the country, of which 7 million are color sets.

Nearly every Soviet family living in areas where television programs can be received has a television set.

Since the territory of the Soviet Union stretches from Kaliningrad to Kamchatka and includes 11 time zones, the times at which the I TV program is broadcast differs from Moscow legal time. The I TV program has been broadcast in five zones since 20 October 1980; now people who live in different time zones of the country can watch the same television transmissions from Moscow on the same day as the residents of the capital, but at convenient local times.

The basic areas of economic and social development of the USSR entail the requirement for introducing a second social-political and artistic national television program during the 11th Five-Year Plan. This program (which is now called the fourth central program) is now being transmitted only to two zones. Further development of the integrated use of ground and space radio-television systems will allow communicators to fulfill the important assignment of the Communist Party concerning the introduction of five-zone broadcasts of the second national television program during the 11th Five-Year Plan as well.

The third central television program is for training, education, and popular science. The area in which it can be seen is also expanding gradually. Besides Moscow and the Moscow Oblast, blocks of teaching transmissions are relayed to many capitals of the union and autonomous republics, kray, and oblast centers, and some cities of oblast subordination.

The basic areas of economic and social development of the USSR for 1981-1985 and up to 1990 require that color television be further developed. It should be emphasized particularly that the introduction of color television was an important stage in the perfection of television broadcast, a qualitative leap which has made it possible to increase its level sharply and allowed television viewers to see the world in its natural colors. The advantages of the joint Soviet-French SECAM system, which is used in the Soviet Union, are that, in contrast to other color television systems, the color subcarrier is frequency- rather than amplitude-modulated, which makes the system insensitive to amplitude-frequency distortions of the circuit.

In order to support the introduction of color television, communicators have done a great deal of work to improve the electrical parameters of existing equipment. All powerful TV transmitting stations and most low-power relays now support color program transmission. Work will continue during the 11th Five-Year Plan to improve the transmission network further and to use a number of technical devices in order to improve color program quality. This includes the TV signal regenerator and TV signal level meter which are used for automatic measurement and monitoring of the video signal at any point in the television circuit, etc.

The 11th Five-Year Plan envisions wider use of satellites to organize multi-program television. A major achievement of scientific-technical progress was the startup of the "Orbita" TV broadcast system, using a satellite and 20 ground receiving stations, by the 50th anniversary of the Great October Revolution. This system now has 90 active "Orbita" stations, and has made it possible to provide the central I TV program to many remote regions of Siberia, the Far East, the Far North, and Central Asia. There are no plans to increase the number of "Orbita" stations during the 11th Five-Year Plan, but work will continue on the improvement of this satellite system, which will be used to a great extent for satellite telephone-telegraph communication and transmitting newspaper columns in addition to receiving television programs.

In 1976, the USSR launched the "Ekran" geostationary TV broadcast satellite. This satellite was new in principle and differed from existing satellites in its high-power on-board relay equipment. This equipment supports the transmission of central color television programs to a network of simplified transceiving stations located in populated areas of Siberia and the Far North. Signals are transmitted to the "Ekran" satellite at  $6,200 \pm 12$  MHz using frequency modulation. The sound accompaniment is sent on a 6.5 MHz subcarrier. The receiver antenna of the "Ekran" satellites receives these signals, which are amplified by the receiver in the relay. The 200 W on-board transmitter, which uses frequency modulation in the 702-726 MHz working band, transmits the signals to the earth by means of a phased-array antenna.

At first, a total of 60 ground transceiving stations were in operation in the "Ekran" system, which is very large, encompassing over 40 percent of the Soviet Union. This extremely economical system now has 1,000 such stations in operation, which provide TV broadcasting with the required quality. It is planned to develop this system further during the 11th Five-Year Plan, since it can be used to provide television at low expense to remote, inaccessible, sparsely populated areas with few residents, where television would not reach for tens of years using ordinary ground technical facilities. It is planned to increase the number of transceiving stations in the "Ekran" system by a factor of several, bringing their number to several thousand by the end of the 11th Five-Year Plan.

The new "Moskva" TV broadcast satellite system was created late in the 10th Five-Year Plan, and is being developed during the 11th. This system includes a ground transmission station, a "Gorizont" high-capacity satellite trunk and a network of ground receiving stations. A central television program plus sound is sent from the television center in Moscow over a terrestrial connecting link to a ground transmitting station. The signals are transmitted to the "Gorizont" satellite in the 6 GHz band using FM. The signals received aboard the satellite are amplified, frequency-converted and then transmitted back to the earth by the 4 GHz 40 W FM transmitter.



through a highly directional antenna to the intended service zone. On the ground, the signals arrive at the receiving station of the "Moskva" system, where they are amplified, converted and sent to a local powerful TV transmitting station, low-power relay, or to the cable distribution network.

The "Moskva" station is much simpler than the "Orbita." The size of the dish used in its antenna system is only 2.5 m instead of 12 m, there is no complex guidance system, and a relatively simple input device is used. This has been achieved by using a high-power transmitter aboard the "Gorizont" satellite and a directional antenna. The "Moskva" receiving station can operate unattended, which means that practically no additional staff is needed to develop this network. A model of the "Moskva" station has been developed with a backup set of equipment and simplified automatic satellite tracking system in order to improve reliability. New "Moskva" receiving stations will be installed in various areas of the country by 1985.

Work will continue to increase the number of high capacity ground TV transmitting stations and to install low-capacity TV relays. It still remains to create and assimilate new multichannel satellite systems in the 12 GHz band which can be used to increase central as well as republic multiprogram television broadcasting.

The most important task assigned by the 26th CPSU Congress is to increase labor productivity. At the beginning of the five-year plan, the labor productivity, or cost per worker (calculated for 1980) in radio broadcast, television, and radio communication was 11,923 rubles, and 4,769 rubles for radiofication. It is planned to provide an increase in the labor productivity of radiofication workers of 10 percent, and of 4-5 percent for radio communication, radio broadcast, and television workers by the end of 1985. This important and difficult task can be accomplished successfully only by unceasing introduction of automated, unattended, remote-controlled equipment, and a substantial improvement of the entire organization of operation of technical facilities, which is provided for in the development plans for all types of radio and television broadcasting.

The task of radio broadcasting and television workers is now to work as well and as productively as possible, expanding socialist competition under the slogan "Bring the Decisions of the 26th CPSU Congress to Life!", to fulfill and even over-fulfill the assignments of the 11th Five-Year Plan, thus making a worthy contribution to carrying out the decisions of the 26th Congress of the Communist Party of the Soviet Union.

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CSO: 5500/17

## BRIEFS

**NEW RADIO-TV TRANSMISSION TOWER AT ROSTOV-ON-DON**--The tower of a new radio-television station--the highest in the North Caucasus--is about to be erected in the northwest section of Rostov-on-Don near the Temernik River. Specialists at the State Union Printing Institute of the USSR Ministry of Communication (GSPI) are developing the technical and economic foundation for this structure. The tower will be 340-350 m high, and will be almost twice as high as the existing tower. The guaranteed reception radius for television broadcasts will be 90-100 km. Citizens of Rostov and residents of surrounding cities and stations will be able to watch three television programs in color and listen to four radio programs. A future capability is planned for installing equipment at the station to transmit a fourth television program. An observation deck is planned at a height of 190 m, which will open a broad panorama of the southern city. [By K. Vladimirov] [Text] [Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 23] [COPYRIGHT: Izdatel'stvo "Radio i svyaz," 1981] 6900

**MOUNTAINTOP TELEVISION RELAY FACILITIES**--Communicators in the Kirghiz are pioneers in using mountaintops as natural supports for television broadcast relays. A group of specialists supervised by former Hero of Socialist Labor K.N. Arsan'yev has developed and fabricated equipment for relay stations. One of the "Yuzhnaya" relay stations of the Osh Radio-Television Center has been placed on the ridges of the Fergana crest in a small area on the Baubesh-Ata peak ("the father of five summits"). The task of the station is to relay television transmissions from Moscow for the southern Kirghiz. The station workers labor selflessly, thanks to which television transmissions are received from Moscow without interruption. [By A.G. Korytov] [Text] [Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 29] [COPYRIGHT: Izdatel'stvo "Radio i svyaz," 1981] 6900

**'OKOP' FDM CONVERSION EQUIPMENT**--An "OKOP" unit has been put into operation on one of the communication mainlines. This is the standard conversion equipment for 60-3,600 channel FDM transmission systems. The system is intended for use at centers and stations of the primary mainline Ye ASS [unified automated communication system] network, and its channels and group circuits are in complete agreement with GOST 21655-76. The equipment is at the state of the art. The parameters of the channels and circuits of the "OKOP" correspond to CCITT recommendations, and exceed those recommendations with respect to loading, noise, AChKh [amplitude-frequency characteristic] irregularity, stability of characteristics, protection against audible transitions and amplitude response. Extensive use of the "OKOP" equipment in the conversion and construction of the primary mainline and zone networks will provide a significant improvement in the quality and reliability of PCh [audiofrequency] circuits and channels. [By I.P. Irinina] [Text] [Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 23] [COPYRIGHT: Izdatel'stvo "Radio i svyaz," 1981] 6900

STORED-PROGRAM RAYON RADIO CENTER--The first automated rayon radio center in the Sumskaya Oblast has been put into operation at the Lebedin rayon center. The modern achievements of domestic radio communication have been used here. Many suggestions were made during the course of construction of the radio center by local rationalizers--senior electrician N.T. Stepanenko and engineer B.G. Steblyanko. The use of electronic stored-program equipment with a high-precision clock is novel. The automated radio center provides high radio broadcast quality. All lines are tested every 10 minutes, and the operation of three rural automated radio centers is supervised. The required program is activated independently according to a weekly master program. [By V. Gol'dman] [Text] [Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 29] [COPYRIGHT: Izdatel'stvo "Radio i svyaz," 1981] 6900

CSO: 5500/17

SET-UP, OPERATION, POTENTIAL OF EURONET DIANE DESCRIBED

Copenhagen DATA in Danish Feb 81 pp 27, 28, 30

[Article: "Euronet DIANE--What, Why and How?"]

[Text] Euronet DIANE is more than just a tool for data transmission. DIANE stands for Direct Information Access Network for Europe and the network gives the user access to 50 million references in 180 different data bases.

Euronet--the EC-based data network--is presumably regarded by most solely as a tool for data transmission. But Euronet is something more than this. What it is and for what and how it can be used will be described in greater detail here.

One of the European Communities' clearly stated goals is to further and develop the European information industry.

One element of this is the use of EDP-based information services, so-called on-line services. In 1970 a study of this use showed first that the use of these services by European firms and institutions was slight as compared with other industrialized parts of the world (especially America) and second that the majority of this use in the future would take place with the use of American services and that European services could be expected to be implemented only to a small extent.

At the same time it was also clear that information and easy and inexpensive access to it would be a necessary prerequisite for further development. The reasons for this situation were many, but the most important was that the technical facilities, i.e., international data transmission facilities, were not there and also could hardly be expected to be established in the near future. Unlike America, European telecommunications traffic is in the public domain and therefore partly independent of consumer demand, and although certain countries had established or had plans to establish a data network it would be a long time before these national networks could be united into an international network.

In order to ensure the access of European industry and research to these information services, the EC Commission decided in 1972 to establish such a network covering all the community's countries--the so-called Euronet, which was put into service in February 1980. The establishment itself took place in cooperation with the telecommunications administrations of the nine countries, in that about two thirds of the costs of establishing it (50 million kroner) had been paid by the commission and the rest by the telecommunications administrations.



Beyond this the communities contribute financially with (partial) financing of the annual operating deficit up to a certain maximum, about 30 million kroner the first year.

Aside from this financing the EC Commission is not involved in the network itself. Operation and the maintenance of it and everything in addition which has to do with network operations lie in the domain of the telecommunications administrations, including the fixing of prices, too. Prices and conditions for connection to the network are entirely up to the telecommunications administrations both at the national and international levels, although the commission's assistance has meant that prices for one thing are significantly lower than what has hitherto been true of similar traffic (40 to 50 percent) and for another are independent of distance and depend only on the connection time and the amount of data transmitted.

In addition to the telecommunications administrations and the commission, a third important group of partners is involved, the so-called host organizations or information centers, combined under the common designation DIANE, for Direct Information Access Network for Europe.

These hosts are organizations, institutions and private service bureaus which offer access to information in the form of so-called data banks and bases. In order to join the DIANE plan these have signed a "memorandum of understanding" with the commission, in which they bind themselves to offer this access on equal terms in accordance with the Treaty of Rome.

In practice this means only that price differentiation between users from various countries must not take place. It is thereby completely up to the individual host what it will offer and for what prices, so long as these prices are the same for users regardless of nationality.

Therefore, hosts compete among one another in both prices and service, which is supposedly to be considered an advantage from the viewpoint of the user. At the present time 24 hosts have joined, offering a total of just under 200 data bases and banks, largely within all subject areas, although the natural sciences are represented best. (See below under what is offered.)

The number of users for the time being is about 1400, just under 100 of them in Denmark, and about 25,000 calls per month are made to the network. It is anticipated that during 1981 about 2000 more users will join the network and that traffic will amount to about 60,000 to 80,000 calls per month.

#### The Network and Connection Capabilities

The network has been designed as a packet communications network according to CCITT Recommendation X25, largely based on the same technology as the French TRANSPAC national network. This technology was chosen on account of the fact that, over and above the political element, that it is a European technology, TRANSPAC at the time of the contract (1977) was the only operational network that followed international standards. A consortium led by the French SESA firm and the English LOGICA, Ltd. firm was responsible for the construction itself, although all the countries were represented by subcontractors, Chr. Røvsing A/S in Denmark.

The network is constructed around five junction points or PSE's (packet switching exchanges) in London, Frankfurt, Paris, Rome and Zurich, which are mutually connected to 48-Kbit lines. Connection of the remaining countries has been carried out by means of 9600-bit lines to PSE's from Copenhagen, Amsterdam, Brussels and Luxembourg, respectively.

The hardware at the junction points is based on two machine types.

The first, the so-called CP-50 processor, was specially developed for the purpose by Philips-CRT and is based on a series of microprocessors. The second is a common-access minicomputer, a MITRA 125. These two machines complement one another and together perform all network functions, in that the MITRA 125 forms the command unit which controls and supervises the CP-50, which is mainly occupied with "switching functions" and interfaces.

Each CP-50 is able to handle 480 terminals at a time. Both synchronous (X25's) and asynchronous terminals can be connected, as at each junction point there are in addition PAD (packet assembly/disassembly) functions by means of which asynchronous terminals can be connected to the network, here in accordance with CCITT recommendations X3 (for PAD) and X9, i.e., teletype compatible terminals. The following connections are possible independently of the mode of transmission and speed:

Asynchronous terminals

100, 200 and 300 bits/s  
600 and 1200 bits/s

via call connections  
via closed circuits

Synchronous terminals

2400, 4800, 9600 and 48,000 bits/s

via closed circuits

These connection capabilities mean that a total of about 300 terminals in existence on the market can be connected directly to the network, the majority via call connections, i.e., by dialing Euronet's national number in the public telephone network. When added to this is the fact that a "black box" interface has been developed with the financial support of the commission for suppliers who do not offer X25's, IBM, for example, and that various projects are under way for the further expansion of connection capabilities, including for the development of hard-copy logs for "page mode terminals" and DEVT's (data entry virtual terminals), it must be stated that from the user's viewpoint there are but few restrictions on connection capabilities.

If one terminal is already at one's disposal it is easy to get started, and if one must be purchased the investment is relatively small.

What Is Offered and What Does It Cost?

Information resources in the DIANE network consist of two types, data banks and data bases.

Data banks, sometimes called numeric data bases, are collections of factual information within various areas. For example, Euronet contains the following:

CRONOS--containing statistical information regarding the community assembled in time series, e.g., regarding imports, exports, balance of payment, unemployment and the like (about 600,000 series in all).

ELECOMPS--facts on electronic components (voltage, resistance, impedance, function, etc.) together with supplier possibilities.

KOMPASS--names and addresses, along with product specifications, for about 60,000 French firms.

PI--OECD's economic indicators.

Other banks contain, for example, mass spectra, chemical constants and toxic effects of elements and substances, etc.

Data bases, or more precisely, bibliographic data bases, contain so-called literature references. Popularly speaking, these are resumes of books, articles in the press and periodicals, conference papers, etc.

Such a resume will typically contain information regarding the author, title, publication reference, key words which characterize the subject area, and the like, often together with an abstract, i.e., five to 10 lines in which a summary description is given of the article's contents and what subject it concerns.

About 80 percent of DIANE's resources are such bibliographic data bases, largely within all subject areas, although the natural sciences are clearly covered the best. Chemistry, physics, medicine and the appertaining disciplines have a nearly exhaustive coverage of world literature, but EDP and electronics and the like are also well covered. The more humanistic disciplines, along with economics and law and the like, are weakest.

One has access to a significant amount of information by means of Euronet DIANE. All in all DIANE contains about 50 million references divided among about 180 different data bases. The size of an individual data base varies widely. The least extensive contain about 20,000 references and the most about two million.

These two million references can be searched in a couple of minutes by means of a dialog language in which one indicates and combines the key words which characterize a specific subject area, and by means of the references written out on terminals one then has the opportunity to procure the original literature.

The advantage is quite clearly in the saving of time. The perusal of periodicals for locating articles of interest is often time consuming and at certain times boring at that. Here one has the opportunity to locate articles which are with high probability in one's field of interest, quickly, simply and at low cost.

Although at first glance the cost perhaps seems high, experience and several analyses have shown that the method is clearly less expensive than traditional literature procurement.

The cost consists of the following components: 1. data transmission costs; 2. search costs; 3. cost of equipment, etc.

Data transmission costs are, as mentioned, independent of geographical distance and are based only on the amount transmitted and the duration of the call.

According to operating statistics a typical search in Euronet lasts about 15 minutes and about 200 segments of 64 bytes each are transmitted.

When using a call connection the price for this (including the value-added tax) is 7.50 kroner. Then the telephone toll must be added to this, i.e., a 15-minute call to area 01, which will be in the range of 1.50 kroner to 11.00 kroner. The price of the use of data bases varies from host to host and from data base to data base. The cheapest cost about 130 kroner per hour and the most expensive 700 kroner per hour.

About 100 kroner for a standard search can therefore be stated as a rough average.

But in a quarter of an hour several million references can be searched. Equipment expenses consist of the following: Euronet subscription; modem; terminal.

For call connections no installation charge is paid for connection to Euronet, but only a quarterly fee of 180 kroner.

Closed circuits follow the normal data element tariffs and modem prices are the normal ones as well. That it is to say that a 300-bit/s modem costs 507 kroner to install and 203 kroner per month.

Finally comes the terminal expense, which ranges from 1000 kroner and up in purchase price.

If one wants to avoid investment costs it is possible instead to make a search with the assistance of intermediaries, so-called information brokers. The documentation section at Danmarks Tekniske Bibliotek [Danish Technical Library] has offered such a service for many years, but other public institutions and private organizations also offer this service.

Only search costs themselves, plus a possible extra charge for intellectual assistance, are paid when information brokers are used.

#### Advantages and Disadvantages

The use of on-line information provides many advantages. The most important are the following: Time and money are saved. More complex searches can be carried out. Large amounts of literature can be searched. Information is procured when it is needed and not, as traditionally, by subscribing to periodicals in the hope of finding relevant articles. The information procured is relevant (as compared with the purchase of periodicals).

This said, it must be stated at the same time that on-line services are not without disadvantages and problems.

The disadvantages are first and foremost that: Only more recent literature is covered, generally only back to 1970. Not all subject areas are covered equally well. Various data bases can contain the same information (redundancy). It



takes about three months from the publication of an article until it is included in a data base.

In addition to the disadvantages concerning the information itself, there are also problems associated with the very use of DIANE. The biggest and more important, from the user's viewpoint, is that the information is spread out among 24 hosts who operate with widely different machines and systems. This means that several search languages often must be used if one wishes to use several hosts. Although the languages are relatively easy to learn it does take a certain amount of time and some training before one masters them.

Administratively the use of several hosts also means several manuals, several bills, several points of contact, several contracts, etc.

It is clear that an attempt has been made to remedy this from central quarters, i.e., the EC Commission. Partly by the establishment of a support group for all involved, the so-called Euronet Launch Team, partly by financing a number of projects with a view toward the goal of harmony. Thus a common search language has been developed, the so-called Common Command Language (CCL), that has now been implemented by seven hosts with five more on the way. In support of the further development of this, during 1981 a data base will be initiated in which the user can train himself in CCL, free of charge, at nearly the simple transmission costs.

Another example of efforts at harmony is the development of guidelines for the formation of user's manuals. Several initiatives are under way, including concerning central billing, harmonizing log-in procedures, etc.

The goal of this work is to make DIANE as homogeneous as possible from the user's viewpoint, so that all systems and bases can be interrogated by means of the same equipment.

Meanwhile there is a long way to go. For one thing it takes time to develop standards and for another there is no central authority in existence to compel hosts to implement these standards. Only the widespread backing of users can in the long term force standardization.

#### Other Use of the Network

Although the network is intended for searching for scientific and technical information (STI traffic), Euronet's capacity is far greater than what this traffic requires today (and for the next few years). By an arrangement between the commission and the telecommunications administrations of the 10 countries it has been opened up for so-called third-party traffic, i.e., the use of Euronet for traditional data transmission. At the present time a number of (international) organizations have already begun to use Euronet for this purpose, and more are expected to begin to in the immediate future.

For security reasons the procedures for the use of Euronet for ordinary transmission are different from STI use. Further information regarding this can be gotten from telecommunications administrations.

## Future Outlook

Euronet has from the start been regarded as an open network. This means that the commission has in principle adopted the viewpoint that any country can join Euronet as long as it is willing to pay its share of the costs. Switzerland joined as of December 1980 and more countries, Scandinavian included, are interested in it.

Sweden, for instance, was the first country outside of EC which applied to join, as early as 1978.

That Sweden has still not joined in spite of the early application is due to several things. Partly an internal Swedish problem regarding payment, partly some discussion regarding its size, partly the method of payment. In addition, the joining of Switzerland has complicated the affair on the political plane, in that the Treaty of Rome's words regarding "non-discrimination" hold for Switzerland in relation to EC countries and for Sweden in relation to EC countries, but what about the Switzerland-Sweden relationship?

However, all problems should now be solved.

Payment itself is taking place in the form of a cash contribution, plus several research projects which are being carried out in Sweden for the commission, including regarding the marketing of on-line information. Payment is being made by the Swedish telecommunications administration and the Delegation for Scientific and Technical Information Supplying (DFI) in conjunction, and the Swiss problem has also been clarified.

How technical joining will take place, via Denmark or via Germany, however, has not yet been decided, but regardless of which technical solution is chosen it will be able to be established during the summer.

Finland has also officially applied to join and it is reported that Norway will also do likewise.

Of other countries it is possible to name Austria, Spain and Portugal, along with, of course, the new EC country, Greece, together with Israel and some Arab states. It can therefore be anticipated that DIANE's information resources will be augmented considerably in the future.

The word DIANE must be emphasized here, in that Euronet will presumably disappear as a network during the 80's as more and more countries construct national networks which are joined together. West Germany and England are introducing national networks in 1981 which are being joined together and to TRANSPAC in France, and several countries have similar plans. Regarding information resources, it must be mentioned, in addition to the fact that they will be augmented, that the trend quite clearly is going in the direction of more data banks and more data bases in areas now thinly covered, so that a balance will be established.

Perhaps especially interesting with regard to information resources is the fact that several projects concerning a union between Euronet and video text and view data systems are under way. Some problems must still be solved, but joining together is presumably possible in a couple of years.

Finally can be mentioned the possibility of the delivery of original literature via Euronet DIANE.

The location of information is as a rule only the first step for the user. The next step will be to procure the original document. Although libraries and the like are often able to do this in a few days, for many it will be an advantage if the document can be supplied by the host itself and via Euronet. The commission has therefore initiated a project concerning the digitization of documents and the development of a hard-copy log and a procedure for the delivery of these documents.

The first concrete results here were shown at a workshop in December in Luxembourg. The experiments were quite promising, although there still is some development to come and a few more political problems regarding copyright, for example, which must be solved. It is also unclear how expensive this form of document procurement will be.

#### Conclusion

There is hardly doubt whether on-line services will be an important element of the information base of organizations in coming years. All experience and market analyses indicate this and with the start of Euronet DIANE the door has been opened for increased European utilization of them--an opening which, thanks to EC initiative, has come considerably earlier than what would have been the case otherwise.

Further information on Euronet DIANE can be gotten, in addition to the telecommunications administrations, from the Danish host in Euronet, I/S Datacentralen af 1959, as well as from the Euronet Launch Team, B.P. 777, Luxembourg, telephone number +352 40221, which was established partly for this purpose.

8985

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# REGULATIONS ISSUED ON PRIVATE RADIO STATIONS

Zurich NEUE ZUERCHER ZEITUNG in German 6 Aug 81 p 29

[Article: "Regulations for 'Free Radio' in Belgium"]

[Text] On 5 July 1981 an ordinance of the Belgian Postal Minister went into effect in which, in dry technical and official jargon, the technical requirements governing free radio were laid down. Andre Andries, the responsible administrator in the postal ministry lists the most important regulations: "First, we define as 'local radio' every transmitter with a range of 8 km, that is one which covers an area with a diameter of approximately 16 km. Prime requirements resulting from this definition are that the transmitter may radiate a maximum of 100 watts and that the antenna may not have a height greater than 35 m. In addition, it is forbidden that the range of the transmitter be extended by any means such as, for example, by injecting local radio programs into the cable network which reaches over 80 percent of Belgian households."

## Legalizing Action Transmitters

With this ordinance the free radio is on the way to official recognition and legalization. About 10 years after its appearance--usually for supporting actions in the area of environmental protection--and 5 years after Italy decontrolled the other, Belgian lawmakers are finally adapting to things as they are; however, not without reservations. The Federal postal minister and the two ministers of culture, who serve as overseers of the two national radio stations BRT and RTBF and who have to work out certification criteria relating to program content, have recently begun to differentiate "free" and "local" radio. Concerning the difference, the Flemish Minister of Culture Rika De Backer-van Okken says: "Free radio means that radio which is primarily dedicated to the relaxation of the listener, preferably the largest possible number of listeners over the largest possible area. This radio is in general not averse to commercial connections. The concept 'local radio' covers the radio that consciously limits itself to a clearly defined area. It will offer information to the local populace and promote communication inside the community addressed. This radio will thus not only provide relaxation but also reporting, commentary and education. Several of these stations will devote themselves to the entire populace of a region; others however address specific target groups such as youth, senior citizens, the handicapped or the sick."



## Program Content Certification Criteria

In relation to the program-content certification criteria, which the two ministers of culture will be developing up to this fall at which time they will be laid before Parliament as proposed legislation, the distinction between "local" and "free" radio has the following meaning: "Local radio must not have any type of connection with commercial or other interest groups. It shall be effected by enthusiastic and capable collaborators who not only enjoy producing radio programs but who will also dedicate them entirely to the public good. Local radio should not be the voice of any particular group or persuasion. What guarantees can be demanded in connection with objectivity, I can not predict. However, the principle of rights in answer applies also to local radio. This will provide a basis for order."

Politicians face a big dilemma. For one thing, their starting position is weak because they are reacting very late to a condition which was allowed to develop undisturbed over a period of several years. Until now the public prosecutor's office has only moved against a number of small student and citizen initiative transmitters, but in no case has it prosecuted one of the large free radio stations operating in and around Brussels with a power of 1,000 watts and which quite openly acknowledge their commercial and partisan political connections.

For another thing, a show of outrage over the commercial and political activities of these stations does not generate credibility. At the beginning of this year, the state controlled radio stations were required to institute a reform which involved yielding a third of the transmission time for political information transmissions by political parties, unions, churches and several other special interest groups which will naturally openly propagate their own views. This means objectivizing programs. Further, the Belgian Government is currently resolved to transmit radio and television commercials over the national networks. The estimated annual income of 120 million francs is not for the purpose of providing the networks with additional funds for better programs but is intended as a contribution toward halting the astronomically high deficit in the national budget.

## Squaring the Circle

Finally, the post and culture ministers are concealing a report which the Belgian Privy Council prepared in response to a law proposed by the liberal representative and newspaper publisher Frans Grootjans. The bill provides above all that in the certification of private radio stations no ideological or philosophical group can be discriminated against. In plain language: Political parties, city officials and opposition factions, unions and religious-charitable groups have equal rights to direct access to the free radio waves. In this the task of the ministers of culture in formulating the program content certification criteria is like squaring the circle. In particular Mrs De Baker-van Ocken has to say: "In the ordinance just discussed--that of the postal minister--the commercial advertising ban for local radio is included. In the proposal, among other things it is decreed that in the case of a violation, the license to transmit will be withdrawn. Also, in the proposed law which is presently being drafted dealing with commercial advertising in radio and television, an advertising ban is imposed on local radio. This proposal also provides penalties. As in the case of transgressing other laws, the responsible authorities must deal severely."

Andre Andries of the postal ministry categorically asserts: "We hope that the federal prosecutor will pursue and severely punish anyone who does not observe the regulations prescribed in the ordinance whether the offense be an exceedence of the transmission power limit or the failure to observe the advertising ban." Minister of Culture De Backer-van Ocken says finally in this regard: "I believe that in this manner we can guarantee that these local radio stations will actually be supported by those people who strive for the sociocultural development of their communities above all else.

#### Who Pays the Bill?

But: Who will really finance local radio? The ministers of culture have refused to provide subsidies and the postal minister requires for issuing the transmission authorization a fee of about 2,000 francs, the posting of a bond in the amount of 2,000 to 4,000 francs and an annual tax of 600 francs. Since the transmission authorization has to be renewed every two years, this is a costly affair for all small stations which serve only noble purposes. Therefore, people in the postal ministry admit, at arm's length, that one has to distinguish between commerce and traffic. But why not write down this difference quite specifically in the law?

Even more astonishing facts are revealed by closer inspection. Why have the ministries involved not considered it necessary to determine qualitatively and quantitatively by accurate empirical investigations among the populace the actual demand for free or local radio broken down according to sociological groups? Why does no one specify exact numbers of listeners and transmitters? All of these imprecisions and ambiguities will, in a country like Belgium, only lead to the generation of ordinances and laws by the state which, when properly sold to the interested voters, promise a few more voices; however, in the end no one will be held to the letter of the law.

In the case of free radio this is especially clear. Until now it has been allowed to exist in spite of a specific ban on transmission which has existed since the beginning of radio and television. This condition exists because technical development is far ahead of the legal system and the cumbersome, uncoordinated bureaucracy. In most cases the transmitter cannot be located and thus seized. And as a rule business connections are effected through private strawmen who usually cannot be convicted of a violation so long as they pay the required taxes on the money they have received from a firm or party. At least for the treasury, money does not stink.

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# ELECTRIC POWER NET TESTING TRANSMISSION OF COMMUNICATIONS

Stockholm SVENSKA DAGBLADET in Swedish 10 Aug 81 p 9

[Article by Dag Bjerke]

[Text] There is room in our electric wiring for more than ordinary current. Just recently, the Stockholm Energy Authority began to experiment with sending messages back and forth in the power net in the form of weak electrical signals.

The technology makes it unnecessary to install a lot of extra wiring for such things as simple telephone intercom systems, remote control signals to central heating plants, and street lighting.

Even the so-called "social alarm system"--that is, the technical "monitoring" of handicapped and aged persons living alone--can be connected to the ordinary electric power net without extra wiring.

Anyone can send any signal he chooses through his own wiring, provided that he does not interfere with radio communications or the power company's equipment, and provided that the devices attached to the house wiring are approved by the Swedish electrical authorities.

The electrical wiring in a house belongs to the homeowner (unlike telephone wires, which are owned by the National Telecommunications Administration). There are already intercom systems on the market which do not require any connection other than an ordinary electric wire.

Voice signals are sent along with the 220-volt current in a home's electrical wiring and can be picked up and sorted out by an intercom receiving unit.

## Different Fuses

According to the manufacturers of such devices, it is not necessary for the intercom sending and receiving units to be on the same circuit in the building's wiring system. Like radio signals, the voice signals can be transferred from one wire to another in the fuse box--without metallic contact. But the signals are weakened.

To prevent chaos due to a swarm of more or less essential voice messages in our electrical system, a committee consisting of representatives of the energy authority and

the National Telecommunications Administration is working on proposed rules for regulating the traffic.

There is little expectation at the Stockholm Energy Authority that any great market will exist for advanced telephone intercom systems with many stations using the electrical wiring. According to Wilhelm Liander of the Stockholm Energy Authority, there will probably be problems, for example, in making good exchanges that can switch the calls correctly.

Wilhelm Liander says: "What it may involve at most is simple systems between the house and garage in a home."

#### Meter Reading

More interesting from the energy authority's standpoint is the possibility of controlling and measuring consumption in Stockholm's thousands of small central heating plants on premises all around the city. That is the immediate goal of the experiments now underway.

Wilhelm Liander says: "Those plants are most often located down in a basement, where there are no telephone or other communication circuits, but there are always electric wires."

By sending signals through those wires, remote control of the central heating plants in question is possible. If something goes wrong in a heating plant today, for example, it often happens that some customers experience no change in heat, while other poor souls freeze because the heat does not reach as far as their apartments.

In such a situation, the new remote control system would make it possible to reduce the heat equally and fairly among all the subscribers while waiting for the failing power plant to go into operation again.

Another idea is that of letting the signal system keep track of energy consumption in the various central heating plants. Today they must be visited individually once a month.

Remote measurement via the electrical wiring is not only cheaper in itself, but also provides more closely spaced readings and, consequently, almost continuous checking of a building's heating plant.

Today it can happen that the heat meter on a customer's premises gets stuck--a fact that may not be discovered for a month. And then the energy authority must bill the customer for estimated usage--something that often results in irritation.

Remote control and remote measurement of central heating plants would also provide a good means of administering and checking consumption in case of rationing.

#### Street Lighting

Another use for signals sent through the electrical wiring is already being tested today. In parts of Stockholm's western suburbs, street lights are turned on and off

by signals sent through the power net. There is also thought of experimenting in other parts of the city with remote-controlled dimming of costly and "unnecessary" lighting during certain hours.

For a long time now, the power companies have been using their own big power lines as telephone lines through which they talk to each other at various power plants and transformer stations.

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